South African Insects May Help Against Cape Ivy

A fly and a moth from South Africa may soon be enlisted to help protect natural treasures in California, Oregon, and Hawaii. That's because these insects might serve as biological control agents for Cape ivy, *Delairea odorata*.

Previously known as German ivy, *Senecio mikanioides*, Cape ivy was introduced from South Africa as an ornamental vine in the late 1800s. It soon escaped and now infests prized natural coastal areas in California up into Oregon and native upland forests on the island of Hawaii. Willow-dominated riparian areas in California have been among the most overrun so far.

"In its homeland, Cape ivy is hard to find," says ARS entomologist Joseph K. Balciunas. "That suggests there are natural insect enemies helping to limit it in South Africa." He works in the Exotic and Invasive Weed Research Unit at ARS' Western Regional Research Center in Albany, California.

"Because Cape ivy is uncommon there, the South Africans didn't know much about the plant's distribution," Balciunas says. He teamed up with Beth Grobbelaar and Stefan Neser, of the Plant Protection Research Institute in Pretoria, South Africa, to search for natural enemies. "In 2 years of surveys, we've more than doubled the knowledge about native locations where Cape ivy grows. We've also identified several insects that could serve as biological control agents here," he says.

In January, Balciunas brought two of those candidates into the insect quarantine facility in Albany. (See "Foreign Agents Imported for Weed Control," *Agricultural Research*, March 2000, p. 4.)

The Cape ivy gall fly, *Parafreutreta regalis*, lays eggs in the tips of stems, where vines and leaves would normally develop. When the larvae hatch, they feed inside the shoots, causing the plant to produce galls (swellings) about the size of a large marble. Although the fly may not cause much direct damage to the ivy, it could slow the vine's ability to spread by decreasing leaf and shoot production.

The other new arrival is a tiny moth, *Acrolepia* sp., recently discovered by Neser. Its larvae—less than one-quarter inch long—form tunnels between the layers of plant tissue in the stems and leaves as they are feeding.

"Native willows could benefit immediately if these insects keep the ivy close to the ground by decreasing vine and leaf production," Balciunas says. Cape ivy harms willows by overgrowing saplings and blocking out light the trees need to survive.

Balciunas will test the insects in quarantine to make sure they don't feed on desirable plants—a process expected to take about 3 to 4 years. "Cape ivy is the only plant in the genus *Delairea*," he says, "which makes it more likely that we'll find an insect that feeds specifically on the weed—a key criterion for a safe biological control agent." He also plans to test several other beetles and moths that the team discovered in South Africa.—By **Kathryn Barry Stelljes,** ARS.

This research is part of Crop Protection and Quarantine, an ARS National Program (#304) described on the World Wide Web at http://www.nps.ars.usda.gov.

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This tiny (about a quarter-inch long) stem-boring moth, *Acrolepia* sp., is being evaluated as a biological control for Cape ivy.